Prevalence of HIV among Patients Attending Endoscopy Units in Sharqia Government Hospitals: Retrospective Study

Abdelmonem Mohamed Elshamy[1], Ahmed Thabet Nagaty[2], Abdalla Mohamed Abdelrahman[3], Ahmad Gamal ElKholy[4], Mahmoud Ahmed Elsayed[1], Ahmed Abdelazeem Wahdan[5], Sameh M. Abdel Monem[1], Mohamed Abdallah Mohamed[1]

[1]Gastroenterology, Hepatology, and Infectious Diseases Department, Faculty of Medicine, Zagazig University, Zagazig, Egypt.

[2]Infectious Diseases Department, Director of Zagazig Fever Hospital, Head of HIV Treatment Center in Sharkia Governorate, Zagazig, Egypt.

[3]Internal Medicine Department, Faculty of Medicine, Zagazig University, Zagazig, Egypt.

[4]Gastroenterology, Hepatology, and Infectious Diseases Department, Zagazig Fever Hospital, Head of Hepatogastroenterlogy and Endoscopy Unit, Zagazig, Egypt.

[5]Gastroenterology, Hepatology, and Infectious diseases Department, Al-ahrar teaching hospital, Zagazig, Egypt.

Corresponding Author
Abdelmonem Mohamed Elshamy
Mobile: +201270433457
E-mail: amelshamy4@gmail.com

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Background and study aim: Human immunodeficiency virus (HIV) is a virus that attacks the body's immune system causing AIDS that represents the severest form of HIV infection. The study aimed to reduce HIV transmission, encourage awareness about HIV transmission and improve quality of life.

Patients and Methods: Our study was performed on participants attending the GIT endoscopy units in Sharqia government hospitals in the period of three years, i.e., from November 2021 to October 2024. Sero-positive patients were 108 patients (76 males and 32 females) out of 11368 participants. Our study is a retrospective record-based study.

Results: Among 108 seropositive patients; 70.4% were males. Among 108 seropositive patients, 81.5% aged from 19 to <40 years. Young adults represented 62.5%, 76% and 85.3% of seropositive HIV patients during years 2021-2022, 2022-2023 and years 2023-2024 with statistically non-significant difference. There is a statistically non-significant relation between route of HIV transmission and either gender or age.

Conclusion: HIV is prevalent among patients attending the GIT endoscopy units in Sharqia government hospitals. We should encourage awareness about HIV transmission, to reduce HIV transmission and improve quality of life.

INTRODUCTION

Human immunodeficiency virus (HIV) is a virus that attacks the human's immune system. This may cause acquired immunodeficiency syndrome (AIDS), which is the severest form of this infection. Interactable immunologic deficiency, opportunistic infections and uncommon malignancies are hallmarks of AIDS [1].

HIV heterosexual transmission is one of the primary causes of AIDS epidemic worldwide. Due to the high frequency of sexual acts that occur in stable relationships, serodiscordant couples, have been used to study heterosexual transmission risk [2].

In Egypt, HIV is more prevalent among high risk groups including street children, female sex workers (FSWs), men who have sex with men (MSM), and injecting drug users (IDUs) [3].

Despite sustained prevention activities, more than 45 million people worldwide are infected with HIV. In Egypt, there are 42000 people living with HIV (www.unaids.org, 2023. Published 2024 Global AIDS Report) [4].

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After HIV inoculation, an acute clinical picture resembling infectious mononucleosis may develop. Later, AIDS related complex may develop in the form of caposi sarcoma, neurological malignancy, lymphoma or opportunistic infections that may be fungal, viral or bacterial [5.[

HIV can be diagnosed with a screening, rapid test that detects antibodies in the serum. Positive cases are confirmed by ELIZA test and CD4 count that can be used also for follow up [6.[

HIV control can be achieved by antiretroviral drugs that are classified into 6 groups including nucleoside reverse transcriptase inhibitors (NRTls), nucleotide reverse transcriptase inhibitors (NtRTls), non-nucleoside reverse transcriptase inhibitors (NNRTls), protease inhibitors (Pis), fusion inhibitors (Fis) and integrase inhibitors (INis) [7.[

HIV cure is not available till now. But with proper medical treatment, HIV control can be achieved, and patients can live long. Effective antiretroviral therapy can reduce the risk of HIV transmission as well as reduce the morbidity and mortality of HIV-infected people. Regardless of CD4 cell count, current guidelines recommend antiretroviral therapy for all HIV-infected individuals [8.[

Rational:

Infection by HIV is very critical, especially in religious and developing countries as people in these countries refuse HIV patients and consider them guilty and the prevalence of HIV is increasing.

Aim of work

The aim of our study is to reduce HIV transmission among patients attending endoscopy units in Sharqia government hospitals and improve quality of life.

PATIENTS AND METHODS

Study design and settings: This study will be conducted in the GIT endoscopy units of Zagazig university hospitals, Al-Ahrar teaching hospital and Zagazig fever hospital, Sharqia government, Egypt. Consents have been taken from all included participants.

Type of the study: retrospective record-based study.

Target population and sampling: All patients ≥ 18 years, both males and females, attending GIT endoscopy units in Zagazig university hospitals, Al-Ahrar teaching hospital and Zagazig fever hospital were included. The sample size was collected from the records. All sero-positive patients in the period of three years, i.e., from November 2021 to October 2024, were included in our study to be 108 patients out of 11368 cases attended the endoscopy units .

Methods and study tools:

All patients attending GIT endoscopy units were subjected to routine HIV screening. (3-5 ml of blood) specimens were collected, transmitted and screened for HIV antibodies by Rabid serological test. Positive tests were confirmed by Enzyme Linked immunosorbent assay (ELIZA) 4th generation.

Statistical analysis:

Data was checked, entered and analyzed using SPSS 22 for Windows. Data were expressed as mean ± SD for quantitative variable, number and percentage for qualitative one. Chi-squared (X2) or t test and paired t test were used when appropriate. $P<0.05$ was considered significant. $P<0.001$ was considered highly significant.

RESULTS

In our study the overall prevalence of HIV was found to be 0.95% (108/11368). Among all patients attending the GIT endoscopy units in Sharqia government hospitals from 2021 to 2024, 8/1932 patients were seropositive during year 2021-2022 (0.41%), 25/3979 were seropositive during year 2022-2023 (0.63%), while 1.37% of those admitted during year 2023 – 2024. Table 1 shows the prevalence of seropositivity .

Among the 108 patients; majority of seropositivity was found in male (70.4%). Male represented 62.5%, 68% and 72% of seropositive HIV patients during years 2021-2022, 2022-2023 and years 2023-2024 with statistically non-significant difference. Among the 108 seropositive patients, 81.5% aged from 19 to <40 years. Young adults represented 62.5%, 76% and 85.3% of seropositive HIV patients during years 2021-2022, 2022-2023 and years 2023-2024 with statistically non-significant difference. The Age and sex distribution of HIV seropositive patients over years is depicted in (Table 2 .(

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Among the 108 seropositive patients, transmission by infected syringes was the major form of transmission (52.8%) while 27.8% of patients were transmitted by heterosexual route, 6.5% homosexual, 2.8% had transmitted by blood transfusion, 5.6% were transmitted by mother to blood transmission and 4.6% had non-specific transmission. During the year 2021-2022, 50% were heterosexual, 25% were infected via blood products transfusion, 12.5% were homosexual and 12.5% were transmitted via infected syringes. During the year 2022-2023, 32% were heterosexual, and 48% were transmitted via infected syringes. During the year 2023-2024, 24% were heterosexual, and 58.7% were transmitted via infected syringes. The difference is significant concerning the route of transmission over the years, blood transfusion and infected syringes significantly differ between years. The route of transmission of HIV seropositive patients over years is depicted in (Table 3 .(

There is a statistically nonsignificant relation between route of HIV transmission and either gender or age. The relation between gender, age and route of HIV transmission is depicted in (Table 4).

Table (1) Prevalence of HIV among the studied patients

	Total number	**Number of confirmed cases n= (%)**	
Year 2021 - 2022	1932	8	0.41%
Year 2022 - 2023	3979	25	0.63%
Year 2023 - 2024	5457	75	1.37%
Total	11368	108	0.95%

Table (2) Age and sex distribution of HIV seropositive patients over years:

	Overall	**Year 2021 - 2022**	**Year 2022 - 2023**	**Year 2023 - 2024**	p
	N=108 (%)	**N=8 (%)**	**N=25 (%)**	**N=75 (%)**	
Sex					
Female	32 (29.6%)	3 (37.5%)	8 (32%)	21 (28%)	0.531
Male	76 (70.4%)	5 (62.5%)	17 (68%)	54 (72%)	
Age group					
19 – <40	88 (81.5%)	5 (62.5%)	19 (76%)	64 (85.3%)	0.079
40 – 61	20 (18.5%)	3 (37.5%)	6 (24%)	11 (14.7%)	

p For Chi square for trend test

Table (3) Route of transmission of HIV seropositive patients over years:

	Overall	**Year 2021 - 2022**	**Year 2022 - 2023**	**Year 2023 - 2024**	p
	N=108 (%)	**N=8 (%)**	**N=25 (%)**	**N=75 (%)**	
Route					
Heterosexual	30 (27.8%)	4 (50%)	8 (32%)	18 (24%)	
Homosexual	7 (6.5%)	1 (12.5%)	2 (8%)	4 (5.3%)	
Through blood	3 (2.8%)	2 (25%)	1 (4%)	0 (0%)	0.017*
Infected syringe	57 (52.8%)	1 (12.5%)	12 (48%)	44 (58.7%)	
Mother to child	6 (5.6%)	0 (0%)	1 (4%)	5 (6.7%)	
Non-specific	5 (4.6%)	0 (0%)	1 (4%)	4 (5.3%)	

p For Chi square test *p<0.05 is statistically significant

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Table (4) Relation between gender, age and route of HIV transmission:

	Heterosexual	Homosexual	Through blood	Infected syringe	Mother to child	Non-specific
	n=30 (%)	n=7(%)	n=3(%)	n=57 (%)	n= 6(%)	n=5 (%)
Sex						
Female	7 (23.3%)	0 (0%)	2(66.7%)	19 (33.3%)	2 (33.3%)	2 (40%)
Male	23 (76.7%)	7 (100%)	1(33.3%)	38 (66.7%)	4 (66.7%)	3 (60%)
p	0.291					
Adult						
Young	26 (86.7%)	6 (85.7%)	2(66.7%)	54 (94.7%)	6 (100%)	3 (60%)
Old	4 (13.3%)	1 (14.3%)	1(33.3%)	3 (5.3%)	0 (0%)	2 (40%)
p	0.248					

p For Chi square test

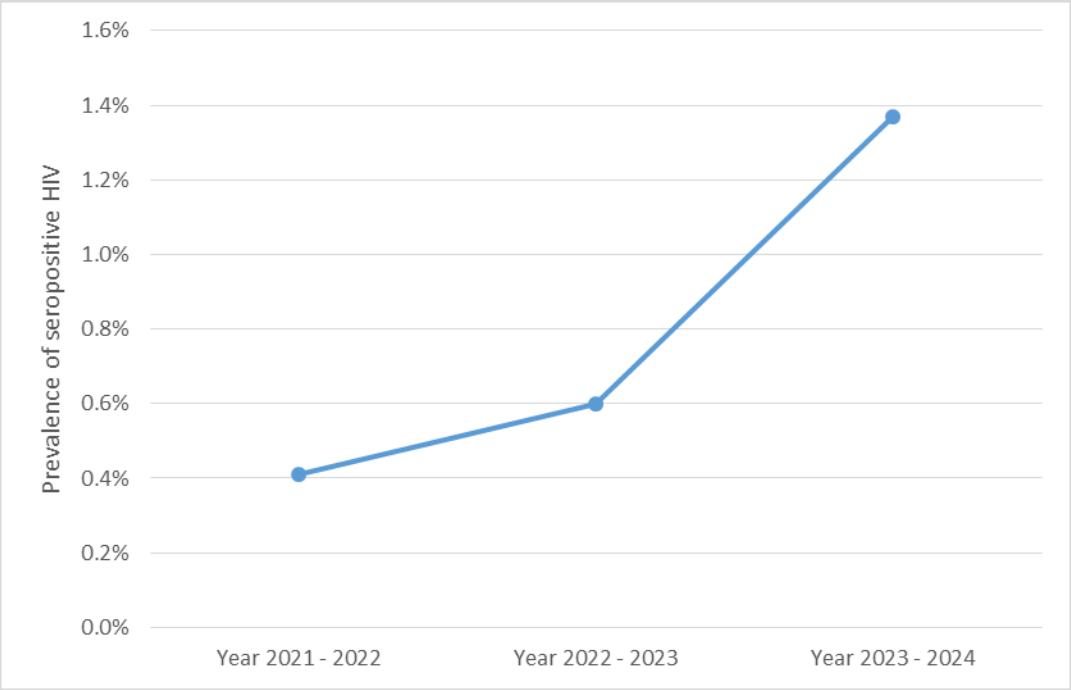

Figure (1) Line graph showing trend in change in incidence of HIV seropositive patients (statistically significant increase in prevalence)

DISCUSSION

Our study was carried out to detect the prevalence of HIV infection among patients (N=11368) attending the GIT endoscopy units in Sharqia government hospitals. The present study shows seropositivity of 0.95% among patients attending the endoscopy units. This prevalence is lower than that reported by Naba et al who reported the prevalence of HIV to be 4.68% (1,919/40,983). This may be attributed to the fact that Naba et al conducted their study in a tertiary care hospital and included all (40,983) clients attending this hospital, while our study conducted in highly specialized centers and included certain (11368) populations who required various GIT endoscopy interventions [9.[

Our study found that the prevalence of HIV during year 2023 – 2024 was (1.37%), which was higher than prevalence (0.41%) during year 2021 – 2022 and that (0.63%) during the year 2022-2023. This may be attributed to the recent routine HIV screening for all patients attending our GIT endoscopy units .

In our study, the male to female positivity ratio was significantly different with a ratio of 1.66:1, 2.125:1 and 2.57:1 in the years 2021-2022, 2022-2023 and 2023-2024 respectively. This higher

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male positivity rate is agreed with Naba et al who reported male to female positivity ratio 2.18:1 [9] and agreed with Madkar et al who reported male to female positivity ratio 3.09:1 [10]. While our high male positivity rate is disagreed with Vyas et al who reported that the positivity rate was higher in females [11.[

In our study, we observe that the seropositivity rate, among the age group ranging from 19 – 40 years, is 81.5%. This is supported by Madkar et al who reported that HIV prevalence was highest in the age group of 30 - 39 years followed by 20 - 29 years [10]. This may be attributed to increasing drug abuse among this age group .

In the present study, the most common mode of transmission of HIV is using infected syringes (52.8%), with the male and female ratio of 2:1. This is not agreed with Vyas et al. who reported that heterosexual route is the most common mode of HIV transmission in Jaipur with a prevalence rate of up to 81.6% [11]. This may be attributed to differences in customs and religious deterrents among peoples.

CONCLUSION

In our study, the prevalence of HIV infection among patients attending the endoscopy units in Sharqia government hospitals is 0.95%, with male preponderance (70.4%), especially among users of infected syringes (52.8.(%

So, we should develop appropriate strategies to reduce HIV transmission particularly among this group.

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Ethical approval:

This study was approved by the local institutional review board of the faculty of

Medicine, Zagazig University (ZU-IRB # 856 / 8 - 12-2024 .(

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Author Contributions :

We ensure that all our authors participate in all parts of the manuscript, including:

-study design, analysis, and data interpretation.

-revision of the paper.

-obtain approval for the submitted version.

We also ensure that we do not exclude anyone who qualifies for authorship from the list of authors.

HIGHLIGHTS

- HIV is prevalent among patients attending the GIT endoscopy units.
- In our study, the prevalence of HIV infection among patients attending the endoscopy units in Sharqia government hospitals is 0.95%, with male preponderance (70.4%), especially among users of infected syringes (52.8.(%
- Our results suggests that we should encourage awareness about HIV, to reduce HIV transmission and improve quality of life.

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